

Haoyi Xiong

# Curriculum Vitae - Haoyi Xiong

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## Education:

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**University of Iowa, IA, U.S.**

**Doctor of Philosophy, Geography**, May 2018 (expected)

Department of Geographical and Sustainability Sciences, GPA: 3.95/4.00

**University at Buffalo, The State University of New York, NY, U.S.**

**Master of Science, Geography**, May 2014

Geography Department, GPA: 4.00/4.00

Thesis: "GIS and environmental modeling utilizing CyberInfrastructure data: Topography, drainage pattern and climate data for runoff and soil erosion modeling"

**Wuhan University, Wuhan, China**

**Bachelor of Engineering, Geomatics Engineering (Major)**, July 2012

School of Geodesy and Geomatics, GPA: 2.96/4.00

**Huazhong University of Science and Technology, Wuhan, China**

**Bachelor of Engineering, Computer Science & Technology (Minor)**, July 2012

School of Computer Science & Technology, GPA: 3.1/4.0

## Publications:

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Tate, E., Strong, A., Kraus, T., & Xiong, H. (2015). Flood recovery and property acquisition in Cedar Rapids, Iowa. *Natural Hazards*, 1-25.

## Research Experience:

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Sep. 2015 – Present *Assisting CNH research project*

- Developing Java API to couple Agent-based models with the Soil and Water Assessment Tool (SWAT) using Fortran and Java

Sep. 2014 – Present *Reducing modeling uncertainty in social vulnerability indices*

- Reviewing literatures to find indicators of social vulnerability during flood-recovery
- Leading the study of sample size uncertainty in the SoVI algorithm and developing programs for analysis with Python

Nov. 2013 – May 2014 *Modeling climate change impact on local environments (Master Thesis)*

- Extract and process local climate data from large climate dataset in CyberInfrastructure for spatial-temporal climate input with Java and NetCDF APIs
- Delineate a highly accurate drainage pattern for impact assessment by developing stream customization research tool with C#
- Simulate and compare local erosion and runoff to demonstrate impact
- Validate results with measured data

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### **Presentations:**

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Haoyi Xiong, Chris Renchler (April 2015). A New GIS Procedure to Delineate Variable Drainage Patterns for Landscape Soil Erosion Simulations. Association of American Geographers Annual Conference. Chicago, IL.

Haoyi Xiong, Chris Renchler (April 2014). Modeling climate change impact – design and analysis for local impact studies in a CyberInfrastructure setting. Association of American Geographers Annual Conference. Tampa, FL.

Haoyi Xiong, Chris Renchler (Nov. 2014). Best management practice in a small watershed near Gowanda. New York State GIS Conference. Saratoga Springs, NY.

Haoyi Xiong, Chris Renchler (Nov. 2014). GeoWEPP I, II & III (Introduction, Non-structural & Structural management). New York State GIS Conference. Saratoga Springs, NY.

Haoyi Xiong, Chris Renchler (Oct. 2013). GeoWEPP Introduction. Niagara County, NY.

### **Work Experience:**

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May 2013 – May 2014 *GeoWEPP software development for ArcGIS 10.1*

Landscape-based Environmental System Analysis & Modeling (LESAM) Lab

University at Buffalo

Leading programmer

- Set up team development plan by designing software framework
- Develop GeoWEPP functions in ArcMap with C#, VB, and ESRI APIs
- Cooperate in developing Windows User Interface with C# and testing software for deployment
- Maintain and improve software based on user feedback
- Develop new research function for a more accurate drainage pattern delineation

Nov. 2012 – Dec. 2012 *Hurricane Sandy Damage Assessment*

Landscape-based Environmental System Analysis & Modeling (LESAM) Lab

University at Buffalo

Research assistant

- Assessed hurricane damage to buildings with aerial image
- Positioned social media for team flood assessment

July 2011 – Sept. 2011 *Land use management project for Putuan Country, China*

Wuhan University

Research Assistant

- Developed database system for budget statistics, by using SQL Server for database development and Visual Studio for Windows User Interface development.
- Used process, event and cursor techniques to implement data processing in database.
- Led team to design land use management map in AutoCAD

### **Professional membership:**

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Association of American Geographers

### **Skills:**

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- Research: Machine learning, High performance and distributed computing, GIS modeling, Spatial analysis,
- Programming language: Python, Java, C#, JavaScript, HTML, SQL, VB, Fortran, C++, Assembly language
- Programming platform: Eclipse, Visual Studio, SQL Server, MySQL
- GIS development Tools: ArcPy, ArcObjects (ESRI APIs)
- Others: Vensim, NetLogo, AnyLogic, Microsoft Office & Visio, Photoshop, Sketch-up